EVALUATING HUMAN PERFORMANCE MODELING FOR SYSTEM ASSESSMENT: PROMISE AND PROBLEMS

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ABSTRACT

The Air Force Human Resources Laboratory is currently involved in the development and evaluation of computational human performance models. This development work is intended to develop models which can be used to interact with system prototypes and simulations to perform system assessment. Currently LR is working on a set of models emulating cognitive, psychomotor, auditory, and visual activity for multiple operator positions of a C2 simulation system. These models, developed in conjunction with BBN Systems and Technologies, function within the simulation environment and allow for both unmanned system assessment and manned (human-in-loop) assessment of system interface and team interactions. These are relatively generic models with built-in flexibility which allows modification of some model parameters.

These models have great potential for improving the efficiency and effectiveness of system design, test, and evaluation. However, the extent of the practical utility of these models is unclear. Initial verification efforts comparing model performance within the simulation to actual human operators on a similar, independent simulation have been performed and current efforts are directed at comparing human and model performance within the same simulation environment. The focus of this presentation will be on the on-going validation process through which the models will be tested and enhanced. Topics covered will include LR's approach; problems with model assessment both conceptual and methodological; and implications for this type of modeling approach.